

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

Autoliv Development AB
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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

23 -05- 2005

Applicant's or agent's file reference

SP 40022 WO

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/SE2005/000264

International filing date (day/month/year)

25.02.2005

Priority date (day/month/year)

11.03.2004

International Patent Classification (IPC) or both national classification and IPC

B62D1/10

Applicant

Autoliv Development AB et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further opinions, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/SE2005/000264

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language, _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/SE2005/000264

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-8</u>	YES
	Claims	<u> </u>	NO
Inventive step (IS)	Claims	<u> </u>	YES
	Claims	<u>1-8</u>	NO
Industrial applicability (IA)	Claims	<u>1-8</u>	YES
	Claims	<u> </u>	NO

2. Citations and explanations:

Cited documents

D1: EP 0414245 A1

D2: US 3127784 A

The invention concerns a gear arrangement for a steering wheel with a stationary housing. It solves the problem of backlash in a gear arrangement of the steering wheel, which gives the steering wheel an undesirable feel. Hence, the object of the invention is to eliminate said backlash.

Document D1 is considered to represent the closest prior art. D1 describes (see abstract and fig. 2) a steering wheel arrangement comprising a first and second gear element mounted between the steering wheel and a steering column. The steering wheel arrangement (see fig. 2-4) is provided with an adjust ring (39) for "adjusting" or "managing" a backlash between a pinion gear and a ring gear (see column 7, line 2-line 26 and column 9, line 14-line 26). D1 does not state explicitly that the aim is to "eliminate" the backlash; however it is considered implicit in D1, since a backlash would clearly not be desirable in a steering wheel arrangement.

The invention according to claim 1 differs from the steering wheel in D1 in that the arrangement comprises at least one anti-backlash gear mounted on one of said gear elements.

Due to these features, a backlash-free gear arrangement is achieved.

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: BOX V

Consequently, with the background of D1, the problem is to design an alternative arrangement which achieves a backlash-free gear arrangement.

A solution to this problem is known from document D2, which describes an arrangement for eliminating backlash in gear trains (see column 1, line 12-line 29, column 2, line 4-line 53 and fig. 1-4).

It is therefore considered to be obvious for a person skilled in the art to use the teachings of D2 together with prior-art as specified in D1 in order to achieve a steering wheel arrangement according to the claimed invention. Accordingly, the steering wheel arrangement as claimed in claim 1 lacks an inventive step.

The remaining claims 2-8 are considered to involve particular detail executions obvious to a person skilled in the art. Therefore, the invention according to these claims is not considered to involve an inventive step.